

IN THE CLAIMS:

Page 21, before Claim 1, delete:

CLAIMS

Page 21, before Claim 1, insert:

WHAT IS CLAIMED IS:

Please cancel claims 1-28 without prejudice or disclaimer, and substitute new claims 29-59 therefor as follows:

Claims 1-28 (Canceled)

29. (New) A Raman amplifier comprising at least one optical fiber and at least one pump laser, optically coupled to said optical fiber, said pump laser being adapted for emitting a pump radiation at a wavelength λ_p , wherein said optical fiber comprises a tellurite glass suitable for enhancing Raman effect, said glass comprising:

from 50% to 90% in mole percentage of TeO_2 ;

from 5% to 45% in mole percentage of a first metal oxide of an element selected from the group of Nb, W, Ti, Tl, Ta, and Mo; and

from 5% to 30% in mole percentage of a second different metal oxide of an element selected from the group of Nb, W, Ti, Pb, Sb, In, Bi, Tl, Ta, Mo, Zr, Hf, Cd, Gd, La, and Ba.

30. (New) The Raman amplifier according to claim 29, wherein the mole percentage of TeO_2 in said glass is from 65% to 85%.

31. (New) The Raman amplifier according to claim 29, wherein the mole percentage of said first metal oxide is from 5% to 30%.

32. (New) The Raman amplifier according to claim 29, wherein the mole percentage of said first metal oxide is from 10% to 25%.,

33. (New) The Raman amplifier according to claim 29, wherein the mole percentage of said second metal oxide is from 5% to 20%.

34. (New) The Raman amplifier according to claim 29, wherein said tellurite glass further comprises an oxide of a metal selected from the group of Y, Sc, Al, Ga, Ge, P, Li, Na, K, Rb, Cs, Mg, Ca, Sr, Be, B, and Zn.

35. (New) The Raman amplifier according to claim 29, wherein said first oxide is an oxide of an element selected from the group of Nb, W and Ti.

36. (New) The Raman amplifier according to claim 29, wherein said second oxide is an oxide of an element selected from the group of Nb, W and Ti.

37. (New) The Raman amplifier according to claim 35, wherein said second oxide is an oxide of an element selected from the group of Nb, W and Ti.

38. (New) The Raman amplifier according to claim 29, wherein said tellurite glass comprises from 50% to 90% in mole percentage of TeO_2 , from 5% to 30% in mole percentage of niobium oxide and from 5% to 30% in mole percentage of tungsten oxide.

39. (New) A Raman amplifier comprising at least one optical fiber and at least one pump laser, optically coupled to said optical fiber, said pump laser being adapted for emitting a pump radiation at a wavelength λ_p , said optical fiber comprising a tellurite glass suitable for enhancing Raman effect, said glass comprising:

from 55% to 95% in mole percentage of TeO_2 ; and

from 5% to 45% in mole percentage of a metal oxide of an element selected from the group of Nb, Ti, Tl, Ta, and Mo.

40. (New) The Raman amplifier according to claim 39, wherein said tellurite glass comprises from 65% to 95% in mole percentage of TeO_2 .

41. (New) The Raman amplifier according to claim 39, wherein said tellurite glass comprises from 5% to 35% in mole percentage of said metal oxide.

42. (New) An optical telecommunication link including an optical fiber path for transmitting an optical signal and at least a Raman amplifier optically coupled along said optical fiber path, said Raman amplifier comprising at least one optical fiber and at least one pump laser, optically coupled to said optical fiber, said pump laser being adapted

for emitting a pump radiation at a wavelength λ_p , wherein said optical fiber comprises a tellurite glass suitable for enhancing Raman effect, said glass comprising:

from 50% to 90% in mole percentage of TeO_2 ;

from 5% to 45% in mole percentage of a first metal oxide of an element selected from the group of Nb, W, Ti, Tl, Ta, and Mo; and

from 5% to 30% in mole percentage of a second different metal oxide of an element selected from the group of Nb, W, Ti, Pb, Sb, In, Bi, Tl, Ta, Mo, Zr, Hf, Cd, Gd, La, and Ba.

43. (New) An optical telecommunication link including an optical fiber path for transmitting an optical signal and at least a Raman amplifier optically coupled along said optical fiber path, said Raman amplifier comprising at least one optical fiber and at least one pump laser, optically coupled to said optical fiber, said pump laser being adapted for emitting a pump radiation at a wavelength λ_p , said optical fiber comprising a tellurite glass suitable for enhancing Raman effect, said glass comprising:

from 55% to 95% in mole percentage of TeO_2 ; and

from 5% to 45% in mole percentage of metal oxide of an element selected from the group of Nb, Ti, Tl, Ta, and Mo.

44. (New) An optical fiber for Raman amplification comprising a glass composition which comprises:

from 50% to 90% in mole percentage of TeO_2 ;

from 5% to 45% in mole percentage of a first metal oxide of an element selected from the group of Nb, W, Ti, Ta, and Mo; and

from 5% to 30% in mole percentage of a second different metal oxide of an element selected from the group of Nb, W, Ti, Pb, Sb, In, Bi, Ta, Mo, Zr, Hf, Cd, Gd, La, and Ba;

said composition being substantially free of erbium.

45. (New) The optical fiber according to claim 44, wherein said first oxide is an oxide of an element selected from the group of Nb, W and Ti.

46. (New) The optical fiber according to claim 44, wherein said second oxide is an oxide of an element selected from the group of Nb, W and Ti.

47. (New) The optical fiber according to claim 44, wherein said glass comprises from 50% to 90% in mole percentage of TeO_2 , from 5% to 30% in mole percentage of niobium oxide and from 5% to 30% in mole percentage of tungsten oxide.

48. (New) An optical fiber for Raman amplification comprising a glass composition which comprises:

from 55% to 95% in mole percentage of TeO_2 ; and

from 5% to 45% in mole percentage of a metal oxide of an element selected from the group of Nb, Ti, Ta, and Mo;

said composition being substantially free of erbium.

49. (New) The optical fiber according to claim 44 or 48 wherein said glass composition has a thermal stability index, $T_x - T_g$, higher than 125°C.

50. (New) The optical fiber according to claim 49, wherein said thermal stability index, $T_x - T_g$, is higher than 150°C.

51. (New) The optical fiber according to claim 49, wherein said thermal stability index, $T_x - T_g$, is higher than 160°C.

52. (New) The optical fiber according to claim 44 or 48, wherein said glass composition shows a maximum Raman gain higher than 100 times with respect to pure silica glass.

53. (New) The optical fiber according to claim 52, wherein said glass composition shows a maximum Raman gain higher than 120 times with respect to pure silica glass.

54. (New) The optical fiber according to claim 44 or 48, wherein said glass composition has a total cross-section of the Raman emission spectrum in the frequency shift range of 200 cm^{-1} to 1080 cm^{-1} , at least 100 times greater with respect to the total cross-section of the Raman emission of pure silica in the same frequency shift range.

55. (New) The optical fiber according to claim 54, wherein said total cross-section of the Raman emission spectrum of said glass composition is at least 120 times greater with respect to the total cross-section of the Raman emission of pure silica in the same frequency shift range.

56. (New) The optical fiber according claim 54, wherein said total cross-section of the Raman emission spectrum of said glass composition is at least 150 times greater with respect to the total cross-section of the Raman emission of pure silica in the same frequency shift range.

57. (New) An optical fiber comprising a core portion and a cladding portion, wherein at least said core portion is made from a tellurite glass which comprises:

from 50% to 90% in mole percentage of TeO_2 ;

from 5% to 45% in mole percentage of a first metal oxide of an element selected from the group of Nb, W, Ti, Tl, Ta, and Mo; and

from 5% to 30% in mole percentage of a second different metal oxide of an element selected from the group of Nb, W, Ti, Pb, Sb, In, Bi, Tl, Ta, Mo, Zr, Hf, Cd, Gd, La, and Ba;

said composition being substantially free of erbium.

58. (New) An optical fiber comprising a core portion and a cladding portion, wherein at least said core portion is made from a tellurite glass which comprises:

from 55% to 95% in mole percentage of TeO_2 ; and

from 5% to 45% in mole percentage of a metal oxide of an element selected from the group of Nb, Ti, Ta, and Mo;

said composition being substantially free of erbium.

59. (New) A method for increasing at least one of the parameters selected among Raman bandwidth broadening and thermal stability of a binary glass composition including tellurium oxide and a first metal oxide of an element selected among Nb, W, Ti, Ta, and Mo which comprises:

preparing a ternary glass composition comprising said tellurium oxide, said first metal oxide and a predetermined amount of a second different metal oxide of an element selected among Nb, W, Ti, Pb, Sb, In, Bi, Ta, Mo, Zr, Hf, Cd, Gd, La, and Ba.